

1. An isolated nucleotide sequence for reducing or preventing the expression of a protein having the activity of a glutamine synthetase in the senescing leaves of a transgenic plant selected from the group consisting of:

- a) the DNA sequence of SEQ ID Nos: 1 and 3;
- b) a nucleotide sequence which encodes the amino acid sequence SEQ ID No: 2;
- c) a nucleotide sequence which is complementary to the nucleotide sequence of a) or b), and
- d) a nucleotide sequence which hybridizes with a nucleotide sequence of a) to c).

2. A vector comprising the nucleotide sequence as claimed in claim 1.

3. The vector as claimed in claim 2, where the vector is a plasmid or a viral vector.

4. The vector as claimed in claim 2, where the nucleotide sequence is operatively linked to at least one regulatory nucleotide sequence.

5. The vector as claimed in claim 4, where a promoter controlling the expression of the nucleotide sequence is arranged 5'-wards of the nucleotide sequence.

6. The vector as claimed in claim 4, where a 3'-polyadenylation signal is arranged 3'-wards of the nucleotide sequence.

7. The vector as claimed in claim 4, where the regulatory sequence is inducible.

8. The vector as claimed in claim 4, where the regulatory sequence confers tissue specificity and/or time specificity to the expression of the nucleotide sequence.

9. The vector as claimed in claim 2, where the nucleotide sequence has antisense orientation to the promoter.

10. A transgenic bacterial or plant cell comprising the vector as claimed in claim 2.

11. The cell as claimed in claim 10, which is a sugarbeet cell.

12. A plant comprising at least one cell as claimed in claim 10.

13. A seed of a plant, wherein said seed comprises at least one plant cell as claimed in claim 10.

14. A method for altering glutamine metabolism in a sugarbeet, where synthesis of glutamine synthetase in senescing leaves in the sugarbeet is prevented or reduced by transforming at least one plant cell with the vector as claimed in claim 3, and regenerating the sugarbeet.

15. A method for producing a transgenic sugarbeet which shows altered glutamine metabolism, where the latter is based on a reduction of the content of glutamine synthetase in senescing leaves and where at least one sugarbeet plant cell is transformed with the vector as claimed in claim 9, and the plant cell is regenerated to an intact plant.